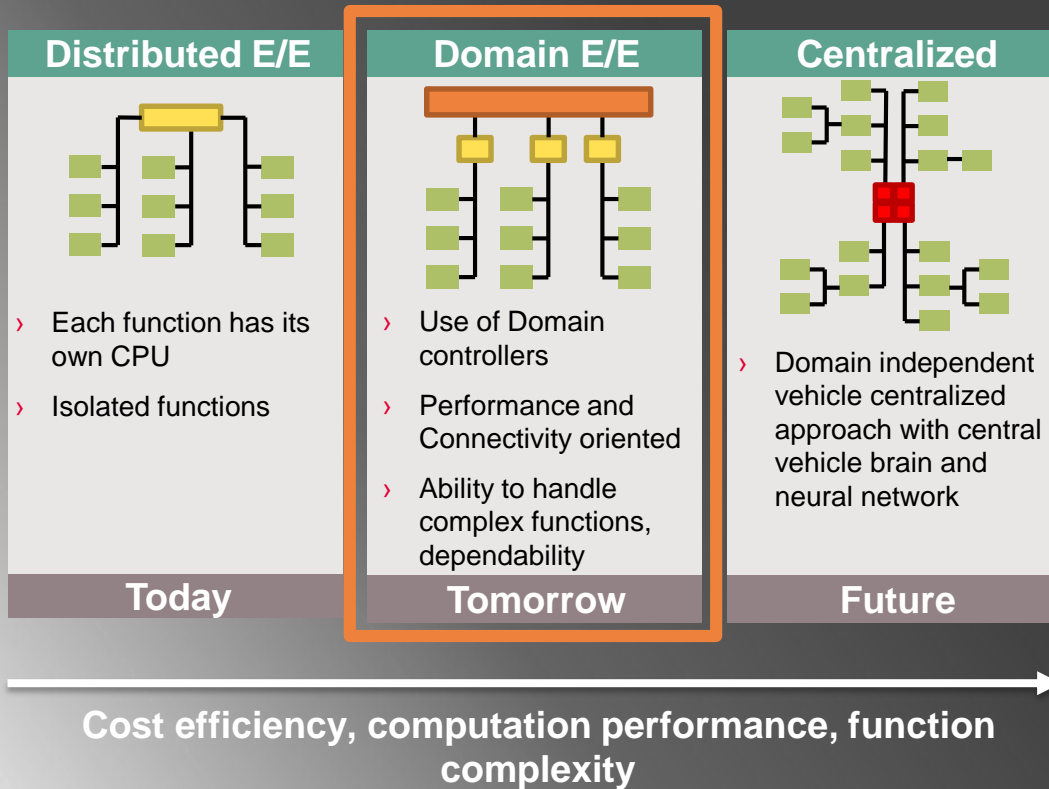


# Gateway 24V Sensor Fusion 24V for commercial, construction and agriculture vehicles (CAV)

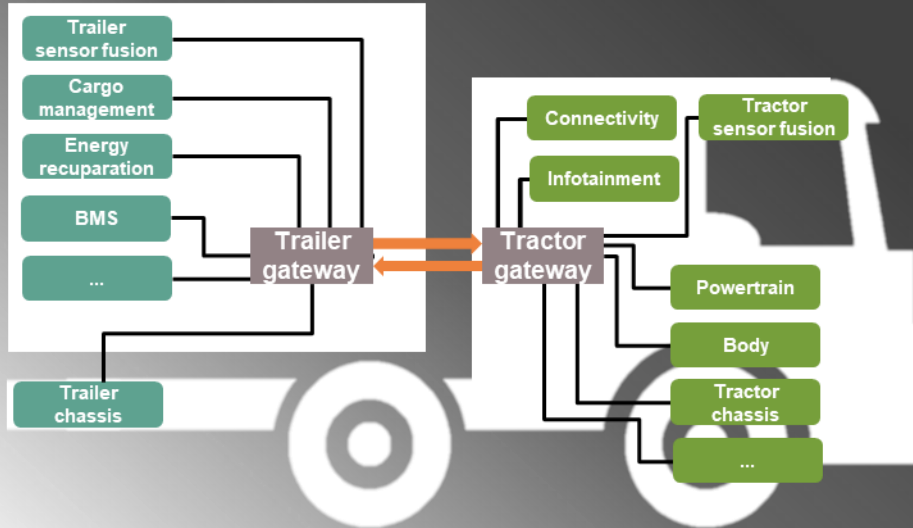
# Evolution of E/E architectures



- ✓ Megatrends in CAV like CO<sub>2</sub> emissions, ADAS and Connectivity require **cost efficient and high performant computational power**
- ✓ Such requirements demand high complexity E/E architectures with respect to in-vehicle communication networks, power networks, **connectivity, safety and security**

# Central gateway using AURIX™

## Example: Tractor / Trailer Gateway



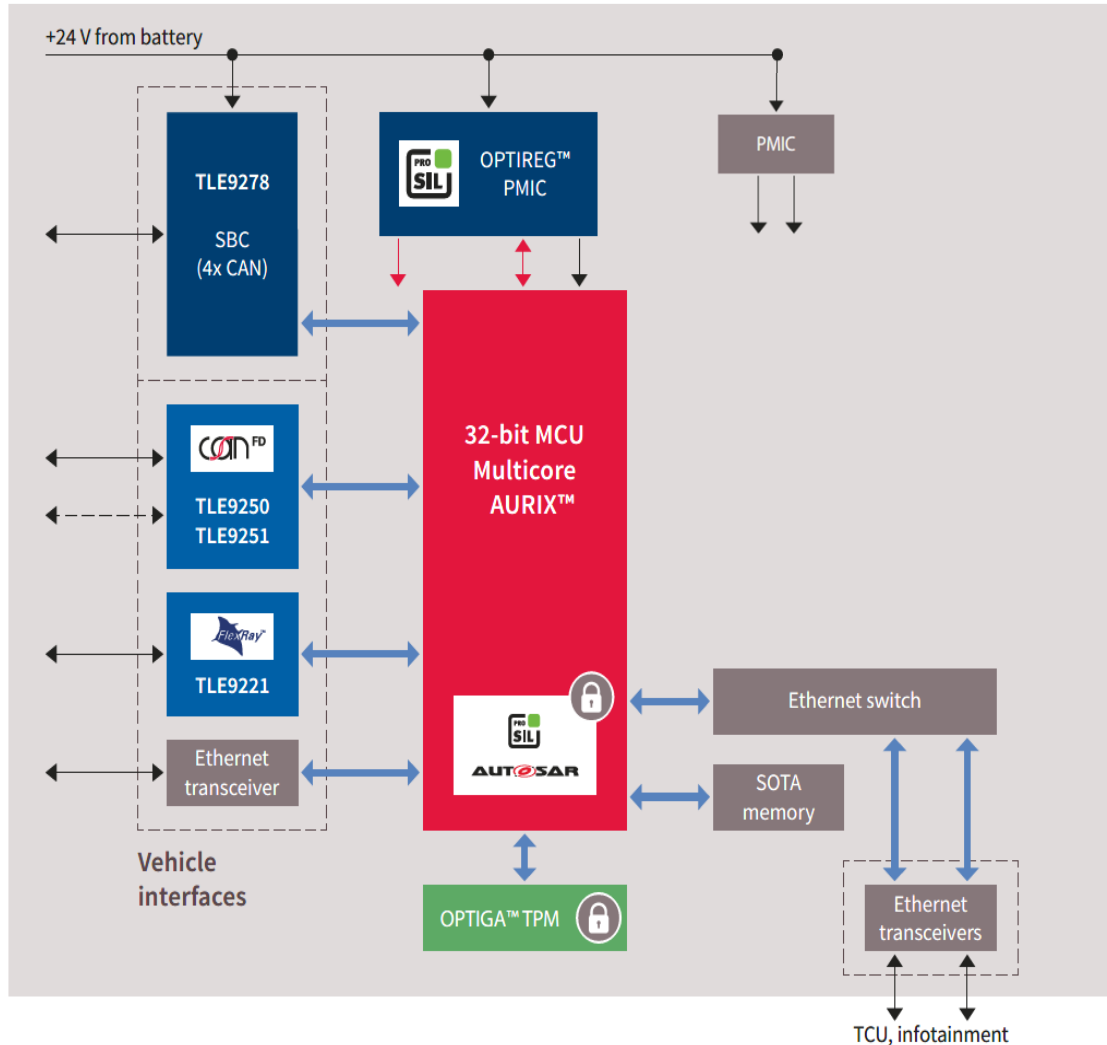
- ✓ Multiple functional domains in the tractor
- ✓ Multiple functional domains in the trailer
- ✓ A gateway works as data hub that interconnects functional domains present across different networks. Safety and security here is a MUST!
- ✓ Data exchange between gateways also possible
- ✓ **Important:** Most of the systems in CAV applications operate in 24 V

### Voltage requirements for Commercial, Construction & Agriculture Vehicles (CAV): "24 V products"

Reverse battery	OFF	Cranking	Nominal voltage (24 V)	Jump start	Load dump
-28 V	0 V	8..12 V	16 V	36 V	48 V
2 min...1 hrs	80 khrs	65 ms	50 khrs	50 khrs	15 min
[25°C]	[-40°C; 150°C]	[-40°C]	[-40°C; 150°C]	[-40°C; 150°C]	[25°C]
					58 V
					400 ms
					[25°C]

# Typical Gateways system block diagram

## Low End solution



### Solution features

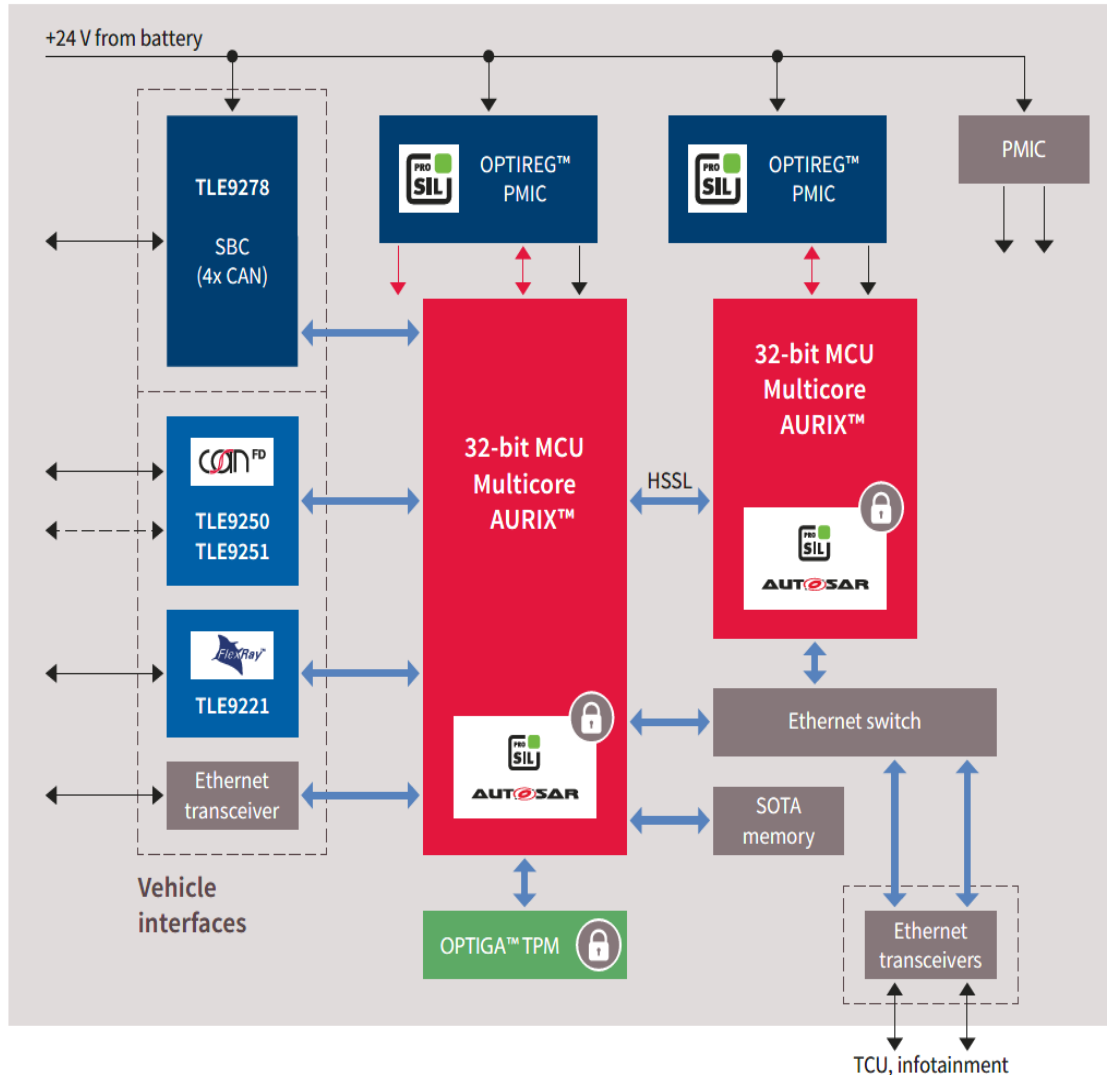
- 24V compliant
- One MCU solution
- Multiple connectivity capabilities
- On-board key generation & deployment
- Protection of the OBD interface
- Advanced Network security
- SOTA capabilities

### AURIX™ benefits

- Computing Performance due to multi core architecture, flexibility, scalability, integrated safety and security support
- SW reuse for OEM and Tier 1

# Typical Gateways system block diagram

## High End solution



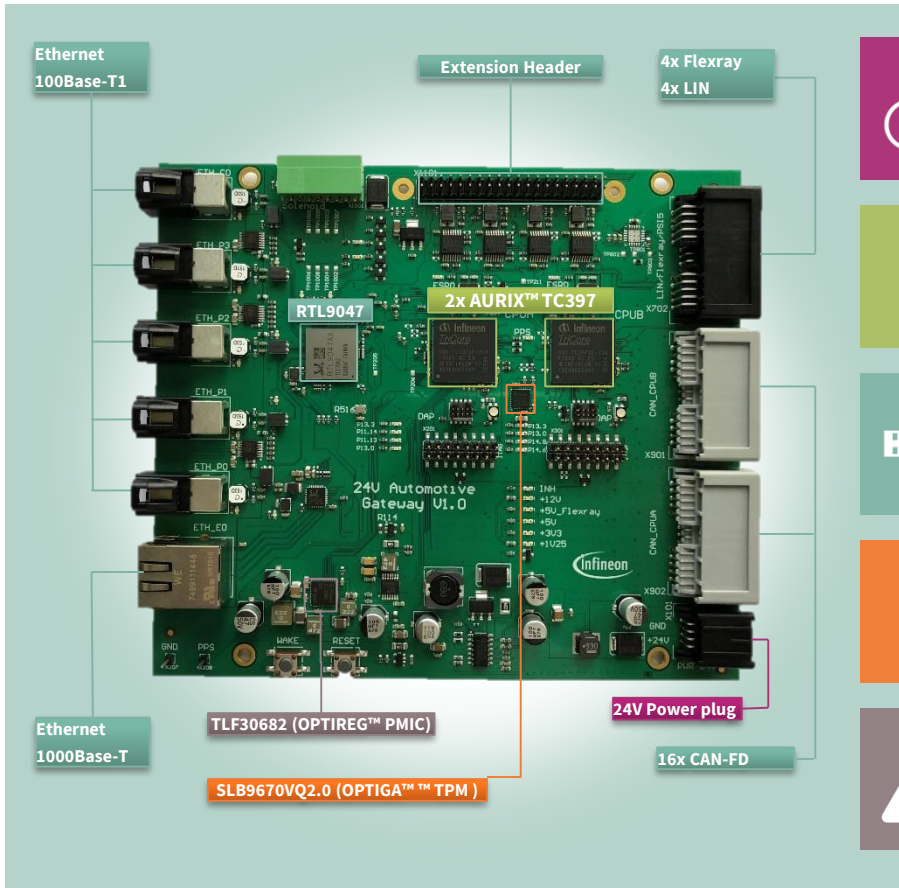
### Solution features

- 24V compliant
- Double MCU solution for high performance computing
- Multiple connectivity capabilities
- On-board key generation & deployment
- Protection of the OBD interface
- Advanced Network security
- SOTA capabilities

### AURIX™ benefits

- Computing Performance due to multi core architecture, flexibility, scalability, integrated safety and security support
- SW reuse for OEM and Tier 1

# Automotive Gateway 24V Board



## 24V Compliant

- Achieving a 24V systems with a high level of integration
- Also able to operate in 12V



## Performance

- **2x AURIX™ TC397** connected via 2x HSSL connection
- › Computing Performance due to multi core architecture, flexibility, scalability, integrated safety and security support



## Connectivity

- 16x CAN-FD, 4x Flexray, 4x LIN
- 5x Ethernet 100Mbit with PoDL, 1x Ethernet 1Gbit using Realtek RTL9047
- Extension header for 3rd party shield devices (e.g Cypress)



## Security

- AURIX™ HSM for secure on-board communications
- OPTIGA™ TPM (Trusted Platform Module) for enhanced security



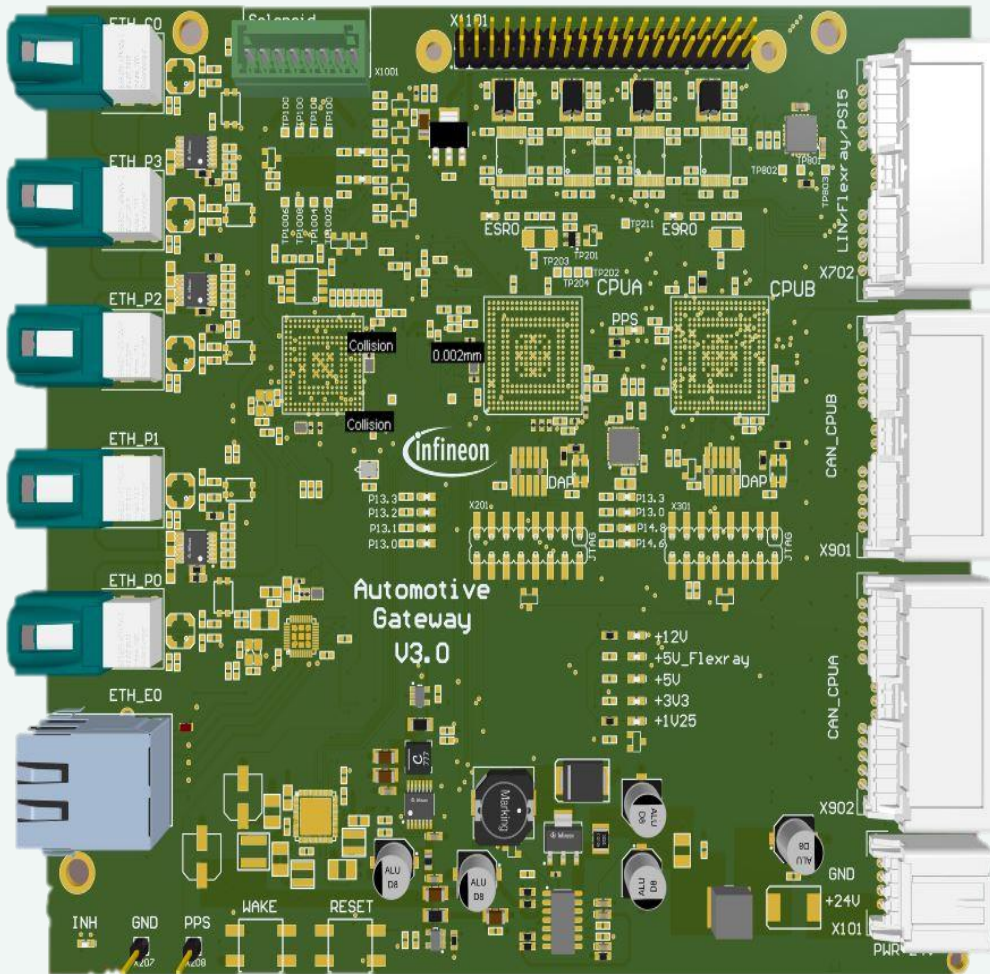
## Safety

- AURIX™ integrated safety measures up to ASILD / SIL3
- Safe power supply with OPTIREG™ PMIC (TLF30682)



# Automotive Gateway 24V Board

## Board Overview



## Features Overview

- 24V compliant
- 2x AURIX™ TC397 connected via 2 HSSL connections
  - 5x Eth.100Mbit with PoDL
  - 1x Eth. 1Gbit
  - 16x CAN-FD
  - 4x LIN channel
  - 4x Flexray
- eMMC
- Automotive connectors

## Infineon BOM Content

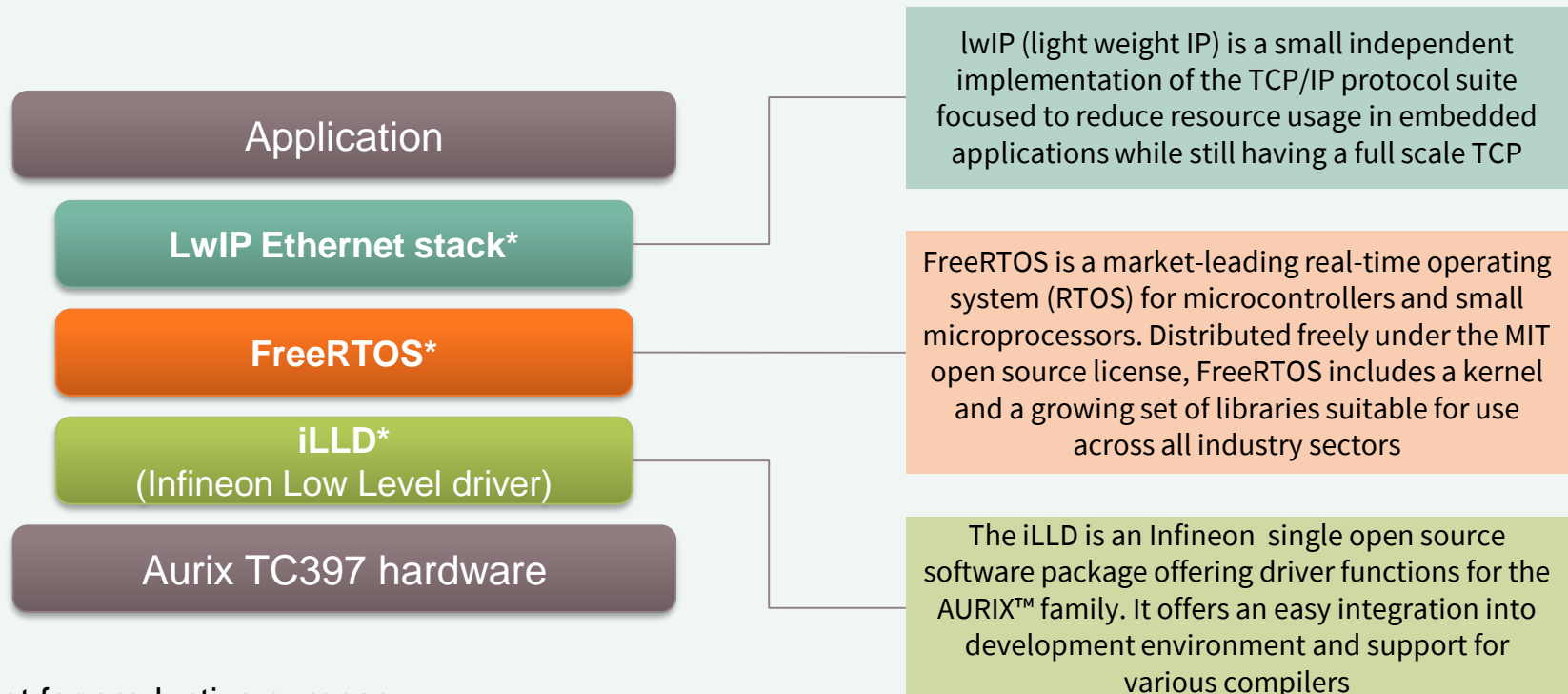
- 2x AURIX™ TC397
- SLB9670VQ2.0 (OPTIGA™™ TPM)
- TLF30682 (OPTIREG™ PMIC)
- TLE6389-2 (OPTIREG™ Switcher )
- BTS7008-2EPA (High Side Switch) for PoDL
- TLS4125

# Automotive Gateway 24V Board

## Software overview

- Demo SW package will be available on MyICP Free of Charge.
- SW is based on AURIX™ low level drivers ILLDs and open Source Stacks (LWIP & Free RTOS Ethernet)
- For Production purpose, AURIX™ rich ecosystem of partners can help provide the SW blocks...

## AURIX™ Demo SW package for Automotive 24V Gateway board

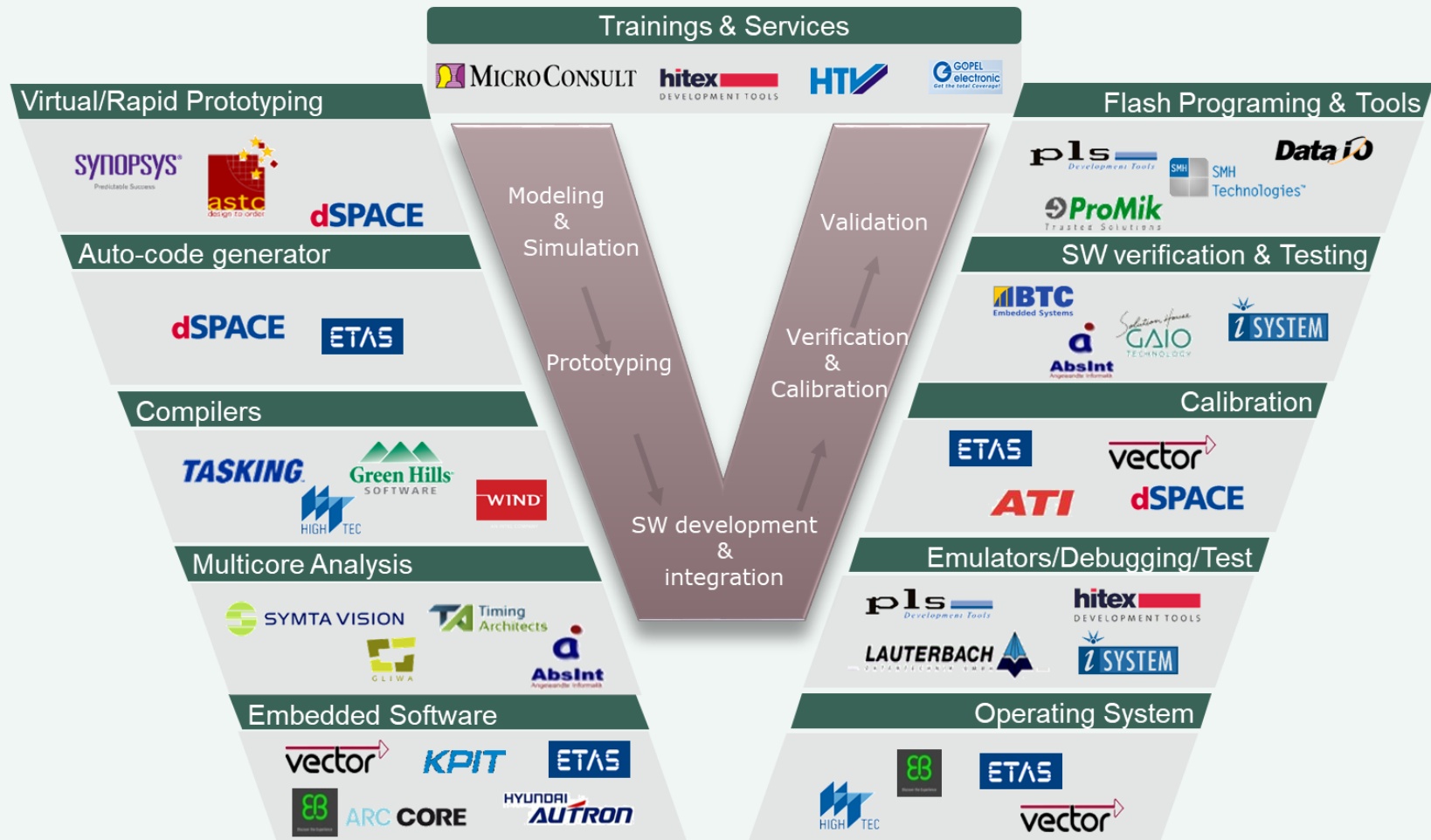


\*Not for productive purpose



# Automotive Gateway 24V Board

## AURIX™ Tool Ecosystem Overview



# Features overview

## Feature overview

- 24V compliant
- 2x AURIX™ TC397 connected via 2 HSSL connections
  - 5x Eth.100Mbit with PoDL
  - 1x Eth. 1Gbit
  - 16x CAN-FD
  - 4x LIN channel
  - 4x Flexray
- eMMC
- Automotive connectors

## Key Applications

- Gateway, Telematics
- Sensor Fusion
- Multi purpose applications

## User benefits

- AURIX™ Computing Performance, flexibility, scalability, integrated safety and security support
- Rapid prototyping
- R&D resource saving for the customer
- Supporting 1Gb Ethernet
- Multiple connectivity capabilities
- Large portfolio with Long Term Availability
- Possibility to enable/disable one of the AURIX™ microcontrollers

## Infineon BOM Content

- 2x AURIX™ TC397
- SLB9670VQ2.0 (OPTIGA™™ TPM)
- TLF30682 (OPTIREG™ PMIC)
- TLE6389-2 (OPTIREG™ Switcher)
- BTS7008-2EPA (High Side Switch) for PoDL
- TLS4125

## Software

- Demo SW package will be available on MyICP Free of Charge.
- SW is based on AURIX™ low level drivers ILLDs and open Source Stacks (LWIP & Free RTOS Ethernet)
- For Production purpose, AURIX™ rich ecosystem of partners can help provide the SW blocks...

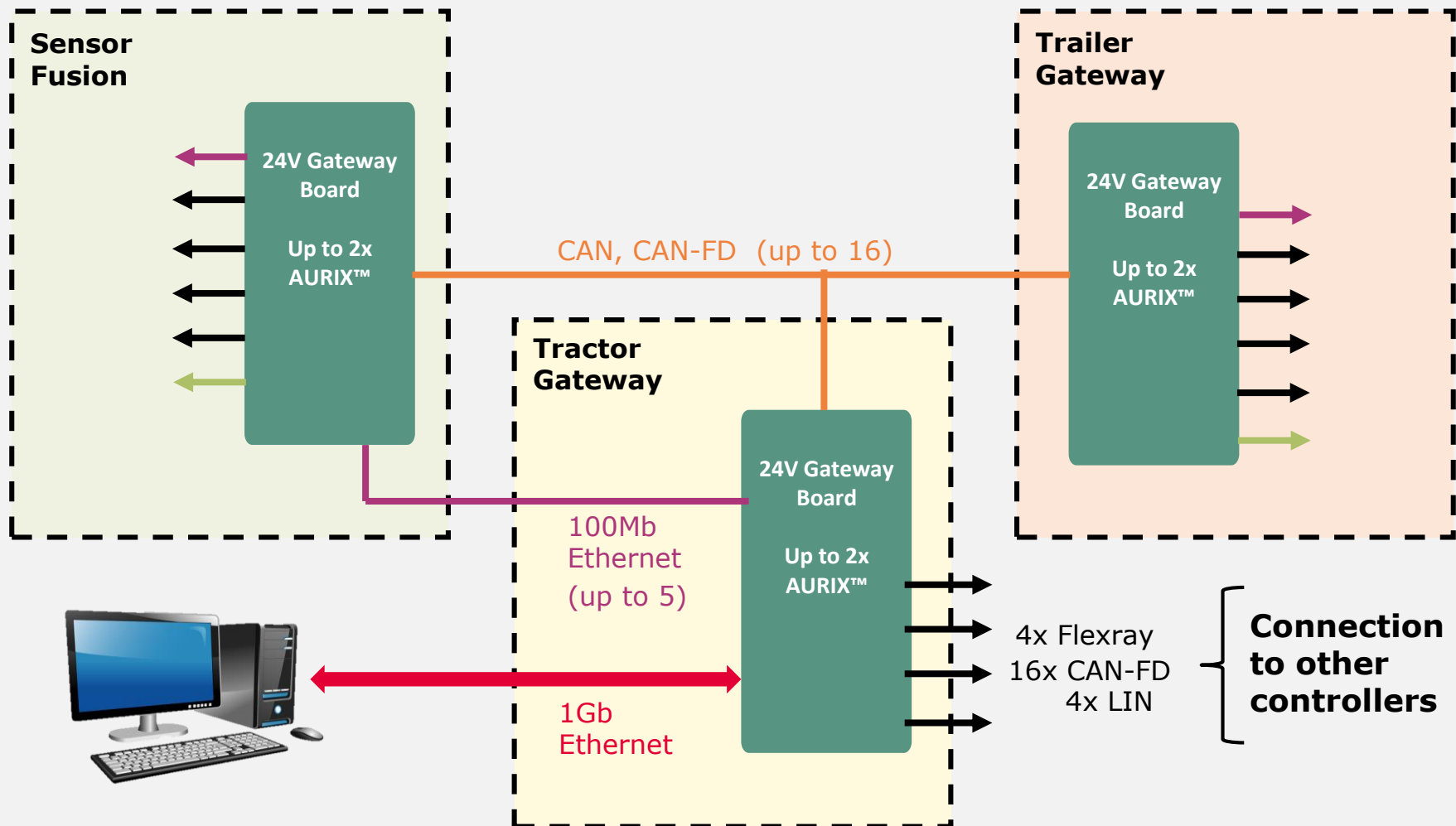
## Availability and Price

**Available !**



# Combinations enabled by Infineon development platforms

**Key User benefits:** Fast prototyping and R&D resource saving



# Summary

## Infineon is your partner in Gateway and Automated drive

### Facilitating development of new systems

- › Gateway development platform
- › Dual AURIX™ sensor fusion development platform

### Benefits of Infineon proposal

- › Safe computing platform = MCU + supply
- › Offers OEM a Flexible and scalable platform
- › Fusion in existing ECU for NCAP
- › Fusion in dedicated ECU for NCAP, L2, L3/L4

### Infineon: leadership in safety and ADAS

- › New safety components developed per ISO26262
- › Focused innovation in safety for value added components and cost saving in Tier1 development.



Part of your life. Part of tomorrow.